ASSESSMENT OF THE ROLE OF THE NATURAL HONEY AS AN ADJUVENT THERAPY IN MANAGEMENT OF RESISTANT INFECTIVE KERATITIS

THESIS

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تقييم دور عسل النحل الطبيعى كعلاج مساعد فى علاج التهاب القرنية الناتج عن العدوى الميكروبية المقاوم للعلاج

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SUMMARY

Resistant infectious keratitis became a challenge that faces most of our ophthalmologists in their daily practice; as to find a corneal button for therapeutic keratoplasty is not an easy mission in our country.

Infective keratitis may be bacterial, fungal, viral or acanthamoeba keratitis.

Microbial keratitis is rare in absence of predisposing factors. until recently, most cases of keratitis were associated with ocular trauma or ocular surface diseases .The widespread use of contact lenses has dramatically increased the incidence of contact lens related keratitis**.**

In ancient times honey from Attica had a special reputation as a curative substance for eye disorders.

Aristotle wrote in 350 BC in section 627a 3 of *Historic Animalium7* that 'White honey.... is good as a salve for sore eyes'.

In our study, we included 10 eyes of 9 patients with resistant infectious keratitis (treatment for more than two weeks without improvement).

The ten eyes were classified into two groups: Study group Control group both of them were treated with fortified eye drops, antifungal eye drops were added according to culture results or if no growth after two scrapings with high suspicion of fungal infection due to history of risk factor and clinical picture *pure natural honey eye drops* was added to the study group only.

- 4 cases from the 5 of the study group have been cured while the 5th didn't respond to treatment.
- 2 cases from the 5 of the control group had been cured (both of them with less severe picture than all the study group cases) while the other 3 cases didn't improve on the usual medications.
- The 4th and 5th case of the control group didn't improve till the honey was added to her previous eye drops and this is a strong indicator of the therapeutic effect of honey in corneal ulcers.
- No side effects were observed during the use of the honey except for mild to moderate tolerable burning sensation directly after instillation and rapidly disappear.

So from our study we concluded that the natural honey has a beneficial effect in the treatment of corneal ulcer with no harmful effect and it may be the only hope in the non surgical treatment of some resistant corneal ulcer.

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LIST OF ABBEREVIATIONS

AK : Acanthamoeba keratitis

AC : Anterior chamber

CAI : Carbonic Anhydrase Inhibitor

Fig : Figure

HSVK : Herpes simplex viral keratitis

IOP : Intra Ocular Pressure

No : Number

Tab : Tablet

VA : Visual Acuity

INTRODUCTION

Resistant infectious keratitis became a challenge that faces a lot of ophthalmologists in their daily practice. Infectious keratitis may be bacterial, fungal, viral or acanthamoeba keratitis.

Microbial keratitis is rare in absence of predisposing factors. Until recently, most cases of keratitis were associated with ocular trauma or ocular surface diseases .The widespread use of contact lenses has dramatically increased the incidence of contact lens related keratitis [1]

Bacterial corneal ulcers typically show a sharp epithelial demarcation with underlying dense supurative stromal infiltration that has indistinct edges and is surrounded by stromal edema. Pseudomonous aeruginosa typically produces stromal necrosis with a shaggy surface and adherent mucopurulent exudates. An endothelial inflammatory plaque, marked anterior chamber reaction and hypopyon frequently occur. [2]Causes of failure of treatment include incorrect diagnosis, inappropriate choice of antibiotics and drug toxicity. [3]

Fungal keratitis may be due to filamentous fungi which cause corneal stromal grayish-white infiltrate with a feathery

border. The epithelium over the infiltrate may be elevated above the remainder of the corneal surface, or there may be an epithelial defect with stromal thinning (ulcer). Non filamentous fungi which cause a yellowish-white stromal infiltrate similar to a bacterial ulcer. Satellite lesions surrounding the primary infiltrate, anterior chamber reaction, hypopyon and mucupurulent discharge are recorded.[4]

Patients with amebic keratitis commonly have severe ocular pain and a protracted, progressive course. Acanthamoeba infection may manifest as a diffuse punctate epitheliopathy or dendritic epithelial lesion in early cases. Stromal infection typically occurs in the central cornea, and early cases have a gray white superficial, nonsuppurative infiltrate. As the disease progresses a partial or complete ring infiltrate in the paracentral cornea is frequently observed.[2]

Herpes simplex keratitis may be seen as macropunctate, dendritic keratitis or a geographic ulcer. Corneal sensitivity is usually affected.[4]

Herpes zoster keratitis may appear as multiple small epithelial dendritiform lesions early, followed by larger pseudodendrites. [4]

When the physician is faced with an ulceration of the cornea, the initial assumption is that it is infectious in etiology. All the corneal ulcers should be considered an emergency. The cornea is scraped and cultured with initiation of antimicrobial therapy.[5]

Initial therapy of microbial keratitis is usually based on the identification of the etiologic microorganisms from diagnostic corneal smears & cultures or may empirically relay on prevalence of microorganisms in the community.[6]

The corner stone of successful treatment is effective topical antimicrobial therapy, although treatment with fortified antibiotics has been in vague for several years. Problem associated with this modality combined with the emergence of antibiotic resistant organisms have prompted interest in exploring therapeutic alternatives .[7]

In ancient times honey from Attica had a special reputation as a curative substance for eye disorders.[8]

Aristotle wrote in 350 BC in section 627a 3 of Historic Animalium that (white honey …. is good as a salve for sore eyes).[9]

AIM OF THE WORK

Study of different types of infectious keratitis concerning clinical manifestations and lines of treatment as well as assessment of the role of topical application of the natural honey as an adjuvant therapy in the treatment of resistant infectious keratitis.

NATURAL HONEY AS A MEDICINE

The usage of honey as a medicine is referred to in the most ancient written records. Honey was prescribed by the physicians of many ancient races of people for a wide variety of ailments. Its ancient use as a wound dressing has been described by Beck & Smedley[8], Majno[10] and by Forrest.[11]

The ancient Egyptians, Assyrians, Chinese, Greeks and Romans all used honey, in combination with other herbs and on its own, to treat wounds and diseases of the gut.[12] The Muslim prophet Mohammed recommended the use of honey for the treatment of diarrhoea.[13]

Aristotle (350 BC) wrote of honey being a salve for wounds and sore eyes.[9] In ancient times honey from Attica had a special reputation as a curative substance for eye disorders.[8]

Honey has continued as a medicine into present day folk-medicine. In India lotus honey is said to be a panacea for eye diseases.[14]